INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 1999	**Park:** Shenandoah NP
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Additional investigators or key field assistants (first name, last name, office phone, office email): No co-investigators	
Permit#: SHEN1999N-247	
Park-assigned Study Id. #: unknown	
Project Title: Collection And Analysis Of Vegetation Data From Selected Shenandoah National Park Habitats	
Permit Start Date: Jan 01, 2000	**Permit Expiration Date** Jan 01, 2000
Study Start Date: Jan 01, 1999	**Study End Date** Jan 01, 2000
Study Status: Completed	
Activity Type: Monitoring	
Subject/Discipline: Ecology (Aquatic, Marine, Terrestrial)	

Objectives:

To expand the existing DCR-DNH vegetation plot data base for the purpose of producing a formal classification of montane vegetation in Virginia. DCR-DNH ecologists had previously collected data from more than 600 plots in the central and southern Blue Ridge, Ridge and Valley, Cumberland Mountains, and Allegheny Mountains portions of the Virginia mountains. Only 10 plots had been sampled from Shenandoah National Park, which comprises the main portion of the northern Blue Ridge. The Park contains some of the best examples in the world of vegetation types associated with Catoctin Formation metabasalt (greenstone), as well as other rare and localized vegetation types on various substrates at high elevations. Therefore, in 1999 this project focused on data collection from specific, geographically restricted vegetation types and natural communities that had been identified as significant resources during a 1989-1991 Natural Heritage inventory of the Park. A standard methodology (described in the research proposal) was employed to collect environmental and floristic/structural data from homogeneous stands of vegetation. Soil samples were collected (following an approved protocol) for chemical analysis by Brookside Laboratories, New Knoxville, Ohio. Voucher specimens of new Park and county plant records were collected. Data collected during this project will be analyzed with approximately 700 other plots to produce a preliminary montane vegetation classification for the U.S. Forest Service and The Nature Conservancy. Anticipated completion data for the preliminary classification in February 2001.

Findings and Status:

Data were collected from 66 plots representing 13 broad vegetation types: eastern hemlock forest (2 plots), high elevation boulderfield forest (5), high elevation granitic outcrop (3), high elevation greenstone outcrop (8), high elevation seepage swamp (1), low elevation greenstone outcrop (10), low elevation seepage swamp (2), mafic wetland (2), mid elevation acidic boulderfield/talus forest (2), mid elevation basic boulderfield/talus forest (9), montane basic woodland (14), northern hardwood forest (2), and rich mesic slope forest (6). To facilitate relocation and long term monitoring activities, plot locations were recorded with a GPS unit and were permanently marked by tagging witness trees. Soil samples from 59 plots (soil could not be extracted from 7 rock outcrops and boulderfields) will be analyzed in February 2000. Voucher specimens were collected from 12 plant populations representing new records, and will be deposited at George Mason University herbarium (GMUF), with some duplicates at Virginia Tech herbarium

(VPI): Dryopteris goldiana (Page Co. record, GMUF), Geranium robertianum (new Park locality, GMUF), Isanthus brachiatus (Rappahannock Co. record, GMUF), Muhlenbergia capillaris (Warren Co. and Park records, GMUF, VPI), Oryzopsis racemosa (Madison Co. record, GMUF, VPI), Panicum philadelphicum (Madison Co. record, GMUF), Paronychia montana (Rappahannock Co. record, GMUF), Sanicula odorata (Page Co. record, GMUF), Sanicula trifoliata (Page and Albemarle Co. records, GMUF), Sporobolus clandestinus (Warren Co. and Park records, GMUF, VPI), and Sporobolus vaginiflorus (Warren Co. and Park records, GMUF, VPI). A number of significant plant communities in the Park, mostly at low and middle elevations, remain to be plot sampled and have been targeted for field work in the spring/summer of 2000. As soon as soil chemistry data are received, the Park will be provided with copies of all plot forms, location maps, and GPS files. Copies of the preliminary montane vegetation classification will be provided in 2001. Data concerning the location of significant communities and rare species populations will be provided as part of a planned data exchange between Inventory and Monitoring and DCR/DNH.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

Yes

Funding provided this reporting year by NPS:	**Funding provided this reporting year by other sources:**
0	0

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university:	**Annual funding provided by NPS to university or college this reporting year:**
n/a	0